



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,519	01/21/2004	Toru Hosoi	FUK.023 DIV	1083
21254	7590	12/17/2004	EXAMINER	
MCGINN & GIBB, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817			LEE, DIANE I	
			ART UNIT	PAPER NUMBER
			2876	

DATE MAILED: 12/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

202

<b>Office Action Summary</b>	<b>Application No.</b> 10/760,519	<b>Applicant(s)</b> HOSOI, TORU	
	<b>Examiner</b> D. I. Lee	<b>Art Unit</b> 2876	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 1/21/04 (Preliminary Amendment).
- 2a) ☐ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 31-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 31-40 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 10/121,678.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/21/04</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Receipt is acknowledged of the Preliminary Amendment filed 21 January 2004. Claims 1-30 and 41-45 have been canceled. Currently, claims 31-40 are remain pending in the application.

#### ***Priority***

2. Acknowledgment is made that this application is a Divisional Application of U.S. Patent Application Serial No. 10/121,678 filed 15 April 2002, which issued as U.S. Pat. No. 6,836,594

#### ***Drawings***

3. Figures 33-40 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

#### ***Allowable Subject Matter***

4. Claims 31-40 are allowed.
5. The following is an examiner's statement of reasons for allowance:

The Prior Art Admitted by the Applicant [PAAA] discloses an array waveguide grating having a predetermined substrate, a first channel waveguide (input channel waveguide) and a second channel waveguide (an output channel waveguide) for light waves  $\lambda_1$  to  $\lambda_n$  transfer on the substrate, a channel

Art Unit: 2876

waveguide array having a plurality of component waveguides having lengths progressively increasing with a predetermined difference between adjacent ones of the waveguides on the substrate, a first slab waveguide for connecting the ends of the first channel waveguides and one end of the channel waveguide array via a waveguide part (1<sup>st</sup> boundary part having a plurality of optical waveguides) having a rectangular, a parabolic, or a second degree function shape with a predetermined width and a length on the substrate, a second slab waveguide for connecting one end of the second channel waveguides and the other end of the channel waveguide array via a waveguide part (2<sup>nd</sup> boundary part) having a second shape that is identical shape as the first shape on the substrate.

Uetsuka teaches a waveguide of the waveguide element for bandwidth adjustment provided on an input side of the input slab wavelength such that the shape part yield a taper-shape, a parabolic hone-shape.

One of ordinary skill in the art would not have been motivated to modify the teachings of PAAA and Uetsuka alone or in combination with other references in order to provide the claimed shape of array waveguide grating that includes first and second channel waveguides for light wave transfer on a substrate where at least a portion of at least one of the first and second shape includes a flaring in an exponential function shape toward the channel waveguide array represented by a function of a degree higher than the second degree toward the channel waveguide array and the open part of the first and second channel waveguides on the side of the first and second slab waveguide having a greater opening width than the waveguide width and shape directed from the stem part of the open part toward the open end is found on the inner side of rectangular shape of the opening width and on the outer side of a second degree curve connecting the stem part and the open end, as set forth in the claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yoneda [US 6,810,180] discloses an optical communication system with an arrayed waveguide grating.

7. This application is in condition for allowance except for the following formal matters: see the Examiner's objections to the drawing above.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to D. I. Lee whose telephone number is (571) 272-2399. The examiner can normally be reached on Monday through Thursday from 5:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on (571) 272-2398. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2876

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



D. I. Lee  
Primary Examiner  
Art Unit 2876

D. L.